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[Continued on next page]

(54) Title: PLANT LIMIT DEXTRINASE INHIBITOR

	10	20	30	40	50
<i>Hordeum vulgare</i>	--MASD-HR	RFVLSGAVILL	SVLAAVAAATL	E-----	SVKD2CQLGV
<i>Oryza sativa</i>	--MASN-KV	VFVSLLLAIVV	SVLAAATATM	EYHHQDQVVY	TFPGFLCQPGH
<i>Hordeum spontaneum</i>	--MAPK-Y	QLLLSAAAVML	AILAATVTT	-----	SFGDQCPAGD
<i>Eleusine coracana</i>	-----	-----	-----	-----	SVGTSCIPG
<i>Sesacile cereale</i>	-----	-----	-----	-----	SVGHCQCPGL
<i>Triticum durum</i>	--MACKSSC	SLILIAAVIL	SVLAA--A	-----	SASSGSCCPGV
<i>Zea mays</i>	MASSSSSSER	RLILAAVIL	SVLAAASA	-----	SAGTSCCPGVW
<i>Triticum aestivum</i>	--MASN-HR	RFVLSGAVILL	SVLAAVAAATL	E-----	SVEDCOPG

	60	70	80	90	100
<i>Hordeum vulgare</i>	DFPHNPLATC	HTYVIKRVCVG	-	-RGPSRPM-LV-	-
<i>Oryza sativa</i>	GYPMXPLPRLC	RALVKRCRQVG	-	-RGTAAAA-EQ-	-KERRC
<i>Hordeum spontaneum</i>	ALAPNPLRAC	RTYVVSQCIC	-	-HVGRPLRLST-WD-	-VERDC
<i>Mlausius coreanae</i>	ALAPNPLDSC	RWVAKRACG	-	-VGPRPLAT-QR-	-MKRRC
<i>Secale cereale</i>	AMPHNPLGAC	RTYVVSQCIC	-	-HVGRPLRLST-WD-	-MKARC
<i>Triticum durum</i>	AFTRNPLPHC	RDYVHLQCTCG	TFPIPGSKLWR	WTISASTYSP GKPYPLAKRC	-MKRRC
<i>Zea mays</i>	AIIPHNPPLPSC	RWVYTSRTCG	-	-IGPRPLWV PE-	-LKRRC
<i>Triticum aestivum</i>	APHNPLLSCG	-	-	-	-

	110	120	130	140	150
<i>Hordeum vulgare</i>	CRELAAPV-D	HCRCEALRIL	MDGVTRP-E	---GRVVRG	RLGDRDRDCPR
<i>Oryza sativa</i>	CQLQAAVDS	WCRCRAISHH	LGGYIIRGLG	---ADPVGHP	MSEVFGRGCR
<i>Hordeum spontaneum</i>	CDELSAIP-A	YCRCEALRIL	MDGTVTWW-Q	---GVPV	YFKDMPNCPR
<i>Brassica campestris</i>	CQRLAEP-A	YCRCEAVRL	MDGVVTPP-	---SGQHEGG	LLQDLQEGPGR
<i>Saccharum cereale</i>	CDKRLAIP-A	YCRCEALRIL	MDGVVTPQ-Q	---GPFEGG	YLKDMMPNCPR
<i>Triticum durum</i>	CQLBLAIS-Q	QCRCRALRYF	LAIPVSPQV	DPRSGNVGHS	GLIDLGEGPGR
<i>Sua cressa</i>	CRHLADIP-A	YCRCEALRIL	MDGAIAPGP-	---DAOQEGR	-LELDGEGPGR
<i>Triticum aestivum</i>	CRELAAPV-D	YCRCEALRIL	MDGVAEEV	---GHVVRG	P1GDPEDCPR

	160	170	180	190
<i>Hordeum vulgare</i>	EEQRPAFAATL	VTAECNCNLSS	VQAPGVRLVLL	LADG-----
<i>Oryza sativa</i>	GDLERAAASL	PAPCNVBDIP	GGG-GCYVCL	ARSGY-----
<i>Hordeum spontaneum</i>	VMQTSYAAANL	VNPQECNLWT	IHHGSPSCPEL	QPGYBVVL-----
<i>Kleusina coracana</i>	QVQRAFPAKQ	VTEBECNLAT	IHHGPFCLSL	LAGE-----
<i>Secale cereale</i>	VTRQSFYANTL	VAPQECNLPT	IHHGPFYCPLT	OAGY-----
<i>Triticum durum</i>	SNQNDPFWVRL	VAPQGNCNLAT	IHNVRVCPAV	BQPLW-----
<i>Zea mays</i>	EVGRQPAFATL	VTEBECNLAT	ISGVACRGTI	LATGGMTPSK-----
<i>Triticum aestivum</i>	BAQREPAATL	VTAECNCNLPT	VS--GVGSTL	GATGRMWTI LPI-----

(57) Abstract: The invention provides a method of producing plants with altered number, size or composition of starch granules, including starch granules having a more uniform size or altered starch structure, the method comprising introducing into a plant a nucleotide sequence comprising a limit dextrinase inhibitor gene, or a fragment or variant, or sequence homologous to the gene sequence provided. Also provided are a nucleotide sequence and protein of the limit dextrinase inhibitor gene, and plant and plant parts produced by the method of the invention. Modified starch is also provided.



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